

- 1 2. ~~(Amended) The method according to claim 1, wherein step b) i) includes the~~
2 ~~steps of~~ A method of determining whether a voice signal includes a modulated
3 data signal, the method comprising the steps of:
4 a) determining whether an answer tone is present in the voice signal;
5 b) when an answer tone is present, performing the steps of:
6 i) locating a first phase reversal in the voice signal, including:
7 1) performing an autocorrelation of a segment of the
8 voice signal;
9 2) searching for the lowest value of the autocorrelation
10 of the segment of the voice signal;
11 3) comparing the determined lowest value of the
12 autocorrelation to a predetermined value; and
13 4) indicating a phase reversal has occurred when the
14 determined lowest value is less than the
15 predetermined value;
16 ii) locating a second phase reversal in the voice signal, the second
17 phase signal being the next consecutive phase reversal in the
18 voice signal after the first phase reversal;
19 iii) determining the time interval between the location of the first
20 phase reversal in the signal and the second phase reversal in the
21 voice signal; and
22 iv) indicating that the voice signal includes a modulated data signal
23 when the determined time interval is between a predetermined
24 range of time values.

- 1 3. ~~(Amended) The method according to claim 1, wherein step b) further includes~~
2 ~~the steps of~~ A method of determining whether a voice signal includes a
3 modulated data signal, the method comprising the steps of:
- 4 a) determining whether an answer tone is present in the voice signal;
5 b) when an answer tone is present, performing the steps of:
- 6 i) locating a first phase reversal in the voice signal, including:
7 ii) locating a second phase reversal in the voice signal, the second
8 phase signal being the next consecutive phase reversal in the
9 voice signal after the first phase reversal;
10 iii) determining a first time interval between the location of the first
11 phase reversal in the signal and the second phase reversal in the
12 voice signal; and
- 13 iv) indicating that the voice signal includes a modulated data signal
14 when the first determined time interval is between a
15 predetermined range of time values;
- 16 v) when the first determined time interval is not between the
17 predetermined range of time values, performing the steps of:
- 18 1) locating a third phase reversal in the voice signal, the
19 third phase signal being the next consecutive phase
20 reversal in the voice signal after the second phase
21 reversal;
- 22 2) determining ~~the~~ a second time interval between the
23 location of the second phase reversal in the signal
24 and the third phase reversal in the voice signal;
- 25 3) indicating that the voice signal includes a modulated
26 data signal when the second determined time interval
27 between the location of the second phase reversal in
28 the signal and the third phase reversal in the voice
29 signal is between the predetermined range of time
30 values; and

- 31 4) indicating that the voice signal does not include a
32 modulated data signal when the second determined
33 time interval between the location of the second
34 phase reversal in the signal and the third phase
35 reversal in the voice signal is not between the
36 predetermined range of time values

- 1 4. ~~(Amended) The method according to claim 1, wherein step a) includes the~~
2 ~~steps of~~ A method of determining whether a voice signal includes a modulated
3 data signal, the method comprising the steps of:
- 4 a) determining whether an answer tone is present in the voice signal,
5 including:
- 6 1) selecting a segment of the voice signal;
7 2) converting the segment of the voice signal from a time
8 domain signal to a frequency domain signal;
9 3) comparing the energy of a bin of the frequency domain
10 signal that corresponds to the frequency of the answer tone
11 with adjacent frequency bins; and
12 4) indicating that the answer tone is present in the segment of
13 the voice signal when the energy of the frequency bin
14 corresponding to the frequency of the answer tone is greater
15 than the energy of the adjacent frequency bins;
- 16 b) when an answer tone is present, performing the steps of:
- 17 i) locating a first phase reversal in the voice signal;
18 ii) locating a second phase reversal in the voice signal, the second
19 phase signal being the next consecutive phase reversal in the
20 voice signal after the first phase reversal;
21 iii) determining the time interval between the location of the first
22 phase reversal in the signal and the second phase reversal in the
23 voice signal; and
24 iv) indicating that the voice signal includes a modulated data signal
25 when the determined time interval is between a predetermined
26 range of time values.

- 1 5. (Original) The method according to claim 4, wherein step a) includes the steps
2 of:
3 a) selecting a segment of the voice signal; and
4 b) down sampling the selected segment of the voice signal.

- 1 6. (Original) A method of packetizing a digital voice signal for transmission over
2 a digital voice network where the voice signal may include a modulated data
3 signal, the method comprising the steps of:
- 4 a) determining whether an answer tone is present in the voice signal;
 - 5 b) when an answer tone is present, performing the steps of:
 - 6 i) locating a first phase reversal in the voice signal;
 - 7 ii) locating a second phase reversal in the voice signal, the second
8 phase signal being the next consecutive phase reversal in the
9 voice signal after the first phase reversal;
 - 10 iii) determining the time interval between the location of the first
11 phase reversal in the signal and the second phase reversal in the
12 voice signal; and
 - 13 iv) when the determined time interval is between a predetermined
14 range of time values performing the steps of:
 - 15 a) demodulating the voice signal to generate a digital data
16 signal;
 - 17 b) packetizing the digital data signal into a plurality of
18 digital packets for transmission over the digital voice
19 network.

- 1 7. (Original) The method according to claim 6, wherein step b) i) includes the
2 steps of:
- 3 a) performing an autocorrelation of a segment of the voice signal;
 - 4 b) searching for the lowest value of the autocorrelation of the segment of
5 the voice signal;
 - 6 c) comparing the determined lowest value of the autocorrelation to a
7 predetermined value; and
 - 8 d) indicating a phase reversal has occurred when the determined lowest
9 value is less than the predetermined value.

- 1 8. (Original) The method according to claim 6, wherein step b) further includes
2 the steps of:

- 3 a) when the determined time interval is not between the predetermined
4 range of time values, performing the steps of;
- 5 i) locating a third phase reversal in the voice signal, the third
6 phase signal being the next consecutive phase reversal in the
7 voice signal after the second phase reversal;
- 8 ii) determining the time interval between the location of the second
9 phase reversal in the signal and the third phase reversal in the
10 voice signal;
- 11 iii) when the determined time interval is between the predetermined
12 range of time values performing the steps of:
- 13 a) demodulating the voice signal to generate a digital data
14 signal;
- 15 b) packetizing the digital data signal into a plurality of
16 digital packets for transmission over the digital voice
17 network; and
- 18 iv) indicating that the voice signal does not include a modulated
19 data signal when the determined time interval between the
20 location of the second phase reversal in the signal and the third
21 phase reversal in the voice signal is not between the
22 predetermined range of time values.

- 1 9. (Original) The method according to claim 6, wherein step b) further includes
2 the steps of:
- 3 a) when the determined time interval is not between the predetermined
4 range of time values, performing the steps of;
- 5 i) locating a third phase reversal in the voice signal, the third
6 phase signal being the next consecutive phase reversal in the
7 voice signal after the second phase reversal;
- 8 ii) determining the time interval between the location of the second
9 phase reversal in the signal and the third phase reversal in the
10 voice signal;

- 11 iii) when the determined time interval between the location of the
12 second phase reversal in the signal and the third phase reversal
13 is between the predetermined range of time values performing
14 the steps of:
15 a) demodulating the voice signal to generate a digital data
16 signal;
17 b) packetizing the digital data signal into a plurality of
18 digital packets for transmission over the digital voice
19 network; and
20 iv) when the determined time interval between the location of the
21 second phase reversal in the signal and the third phase reversal
22 is not between the predetermined range of time values
23 performing the steps of:
24 a) compressing the voice signal; and
25 b) packetizing the compressed voice signal into a plurality
26 of digital packets for transmission over the digital voice
27 network.

- 1 10. (Original) The method according to claim 6, wherein step a) includes the steps
2 of:
3 a) selecting a segment of the voice signal;
4 b) converting the segment of the voice signal from a time domain signal to
5 a frequency domain signal;
6 c) comparing the energy of a bin of the frequency domain signal that
7 corresponds to the frequency of the answer tone with adjacent
8 frequency bins; and
9 d) indicating that the answer tone is present in the segment of the voice
10 signal when the energy of the frequency bin corresponding to the
11 frequency of the answer tone is greater than the energy of the adjacent
12 frequency bins.

- 1 11. (Original) The method according to claim 10, wherein step a) includes the
2 steps of:
3 a) selecting a segment of the voice signal; and
4 b) down sampling the selected segment of the voice signal.

- 1 12. (Original) A method of packetizing a digital voice signal for transmission over
2 a digital voice network where the voice signal may include a modulated data
3 signal, the method comprising the steps of:
4 a) determining whether an answer tone is present in the voice signal; and
5 b) when an answer tone is present, performing the steps of:
6 i) locating a first phase reversal in the voice signal;
7 ii) locating a second phase reversal in the voice signal, the second
8 phase signal being the next consecutive phase reversal in the
9 voice signal after the first phase reversal;
10 iii) determining the time interval between the location of the first
11 phase reversal in the signal and the second phase reversal in the
12 voice signal; and
13 iv) when the determined time interval is between a predetermined
14 range of time values performing the steps of:
15 a) encoding the voice signal into a digital data signal
16 comprising the modulated data signal by linearly
17 quantizing the voice signal; and
18 b) packetizing the coded voice signal into a plurality of
19 digital packets for transmission over the digital voice
20 network.

- 1 13. (Original) The method according to claim 12, wherein step b) i) includes the
2 steps of:
3 a) performing an autocorrelation of a segment of the voice signal;
4 b) searching for the lowest value of the autocorrelation of the segment of
5 the voice signal;

- 6 c) comparing the determined lowest value of the autocorrelation to a
- 7 predetermined value; and
- 8 d) indicating a phase reversal has occurred when the determined lowest
- 9 value is less than the predetermined value.

1 14. (Original) The method according to claim 12, wherein step b) further includes
2 the steps of:

- 3 a) when the determined time interval is not between the predetermined
- 4 range of time values, performing the steps of;
- 5 i) locating a third phase reversal in the voice signal, the third
- 6 phase signal being the next consecutive phase reversal in the
- 7 voice signal after the second phase reversal;
- 8 ii) determining the time interval between the location of the second
- 9 phase reversal in the signal and the third phase reversal in the
- 10 voice signal;
- 11 iii) when the determined time interval is between the predetermined
- 12 range of time values performing the steps of:
- 13 a) encoding the voice signal into a digital data signal
- 14 comprising the modulated data signal by linearly
- 15 quantizing the voice signal; and
- 16 b) packetizing the coded voice signal into a plurality of
- 17 digital packets for transmission over the digital voice
- 18 network; and
- 19 iv) indicating that the voice signal does not include a modulated
- 20 data signal when the determined time interval between the
- 21 location of the second phase reversal in the signal and the third
- 22 phase reversal in the voice signal is not between the
- 23 predetermined range of time values.

- 1 15. (Original) The method according to claim 12, wherein step b) further includes
2 the steps of:
- 3 a) when the determined time interval is not between the predetermined
4 range of time values, performing the steps of;
- 5 i) locating a third phase reversal in the voice signal, the third
6 phase signal being the next consecutive phase reversal in the
7 voice signal after the second phase reversal;
- 8 ii) determining the time interval between the location of the second
9 phase reversal in the signal and the third phase reversal in the
10 voice signal;
- 11 iii) when the determined time interval between the location of the
12 second phase reversal in the signal and the third phase reversal
13 is between the predetermined range of time values performing
14 the steps of:
- 15 a) encoding the voice signal into a digital data signal
16 comprising the modulated data signal by linearly
17 quantizing the voice signal;
- 18 b) packetizing the coded voice signal into a plurality of
19 digital packets for transmission over the digital voice
20 network; and
- 21 iv) when the determined time interval between the location of the
22 second phase reversal in the signal and the third phase reversal
23 is not between the predetermined range of time values
24 performing the steps of:
- 25 a) compressing the voice signal; and
- 26 b) packetizing the compressed voice signal into a plurality
27 of digital packets for transmission over the digital voice
28 network.

- 1 16. (Original) The method according to claim 12, wherein step a) includes the
2 steps of:
- 3 a) selecting a segment of the voice signal;
- 4 b) converting the segment of the voice signal from a time domain signal to
5 a frequency domain signal;
- 6 c) comparing the energy of a bin of the frequency domain signal that
7 corresponds to the frequency of the answer tone with adjacent
8 frequency bins; and
- 9 d) indicating that the answer tone is present in the segment of the voice
10 signal when the energy of the frequency bin corresponding to the
11 frequency of the answer tone is greater than the energy of the adjacent
12 frequency bins.
- 1 17. (Original) The method according to claim 16, wherein step a) includes the
2 steps of:
- 3 a) selecting a segment of the voice signal; and
- 4 b) down sampling the selected segment of the voice signal.
- 1 18. (Original) A method of transmitting a digital voice signal over a digital voice
2 network where the voice signal may include a modulated data signal; the
3 method comprising the steps of:
- 4 a) determining whether an answer tone is present in the voice signal;
- 5 b) when an answer tone is present, performing the steps of:
- 6 i) locating a first phase reversal in the voice signal;
- 7 ii) locating a second phase reversal in the voice signal, the second
8 phase signal being the next consecutive phase reversal in the
9 voice signal after the first phase reversal;
- 10 iii) determining the time interval between the location of the first
11 phase reversal in the signal and the second phase reversal in the
12 voice signal; and
- 13 iv) when the determined time interval is between a predetermined
14 range of time values performing the steps of:

- 15 a) demodulating the voice signal to generate a digital data
16 signal;
17 b) packetizing the digital data signal into a plurality of
18 digital packets for transmission over the digital voice
19 network
20 c) transmitting the digital packets across the network;
21 d) converting the digital packets into a received digital signal;
22 e) determining whether the received signal includes a digital data signal;
23 f) when the received digital signal includes a digital data signal
24 modulating the received digital signal into a modulated data signal.

1 19. (Original) The method according to claim 18, wherein step b) i) includes the
2 steps of:

- 3 a) performing an autocorrelation of a segment of the voice signal;
4 b) searching for the lowest value of the autocorrelation of the segment of
5 the voice signal;
6 c) comparing the determined lowest value of the autocorrelation to a
7 predetermined value; and
8 d) indicating a phase reversal has occurred when the determined lowest
9 value is less than the predetermined value.

1 20. (Original) The method according to claim 18, wherein step b) further includes
2 the steps of:

- 3 a) when the determined time interval is not between the predetermined
4 range of time values, performing the steps of;
5 i) locating a third phase reversal in the voice signal, the third
6 phase signal being the next consecutive phase reversal in the
7 voice signal after the second phase reversal;
8 ii) determining the time interval between the location of the second
9 phase reversal in the signal and the third phase reversal in the
10 voice signal;

- 11 iii) when the determined time interval is between the predetermined
12 range of time values performing the steps of:
13 a) demodulating the voice signal to generate a digital data
14 signal;
15 b) packetizing the digital data signal into a plurality of
16 digital packets for transmission over the digital voice
17 network; and
18 iv) indicating that the voice signal does not include a modulated
19 data signal when the determined time interval between the
20 location of the second phase reversal in the signal and the third
21 phase reversal in the voice signal is not between a
22 predetermined range of time values.

- 1 21. (Original) The method according to claim 18, wherein step b) further includes
2 the steps of:
3 a) when the determined time interval is not between the predetermined
4 range of time values, performing the steps of;
5 i) locating a third phase reversal in the voice signal, the third
6 phase signal being the next consecutive phase reversal in the
7 voice signal after the second phase reversal;
8 ii) determining the time interval between the location of the second
9 phase reversal in the signal and the third phase reversal in the
10 voice signal;
11 iii) when the determined time interval between the location of the
12 second phase reversal in the signal and the third phase reversal
13 is between the predetermined range of time values performing
14 the steps of:
15 a) demodulating the voice signal to generate a digital data
16 signal;
17 b) packetizing the digital data signal into a plurality of
18 digital packets for transmission over the digital voice
19 network; and

20 iv) when the determined time interval between the location of the
21 second phase reversal in the signal and the third phase reversal
22 is not between the predetermined range of time values
23 performing the steps of:
24 a) compressing the voice signal; and
25 b) packetizing the compressed voice signal into a plurality
26 of digital packets for transmission over the digital voice
27 network;
28 and wherein the method further includes the step of when the received digital
29 signal does not include a digital data signal decompressing the received digital
30 signal into a voice signal.

1 22. (Original) The method according to claim 18, wherein step a) includes the
2 steps of:
3 a) selecting a segment of the voice signal;
4 b) converting the segment of the voice signal from a time domain signal to
5 a frequency domain signal;
6 c) comparing the energy of a bin of the frequency domain signal that
7 corresponds to the frequency of the answer tone with adjacent
8 frequency bins; and
9 d) indicating that the answer tone is present in the segment of the voice
10 signal when the energy of the frequency bin corresponding to the
11 frequency of the answer tone is greater than the energy of the adjacent
12 frequency bins.

1 23. (Original) The method according to claim 22, wherein step a) includes the
2 steps of:
3 a) selecting a segment of the voice signal; and
4 b) down sampling the selected segment of the voice signal.

- 1 24. (Original) A method of transmitting a digital voice signal over a digital voice
2 network where the voice signal may include a modulated data signal, the
3 method comprising the steps of:
- 4 a) determining whether an answer tone is present in the voice signal;
 - 5 b) when an answer tone is present, performing the steps of:
 - 6 i) locating a first phase reversal in the voice signal;
 - 7 ii) locating a second phase reversal in the voice signal, the second
8 phase signal being the next consecutive phase reversal in the
9 voice signal after the first phase reversal;
 - 10 iii) determining the time interval between the location of the first
11 phase reversal in the signal and the second phase reversal in the
12 voice signal; and
 - 13 iv) when the determined time interval is between a predetermined
14 range of time values performing the steps of:
 - 15 a) encoding the voice signal into a digital data signal
16 comprising the modulated data signal by linearly
17 quantizing the voice signal;
 - 18 b) packetizing the coded voice signal into a plurality of
19 digital packets for transmission over the digital voice
20 network
 - 21 c) transmitting the digital packets across the network;
 - 22 d) converting the digital packets into a received digital signal;
 - 23 e) determining whether the received signal includes a coded voice signal;
24 and
 - 25 f) when the received digital signal includes a encoded data signal
26 decoding the received digital signal into a modulated voice signal by
27 dequantizing the received digital signal.

- 1 25. (Original) The method according to claim 24, wherein step b) i) includes the
2 steps of:
- 3 a) performing an autocorrelation of a segment of the voice signal;
- 4 b) searching for the lowest value of the autocorrelation of the segment of
5 the voice signal;
- 6 c) comparing the determined lowest value of the autocorrelation to a
7 predetermined value; and
- 8 d) indicating a phase reversal has occurred when the determined lowest
9 value is less than the predetermined value.

- 1 26. (Original) The method according to claim 24, wherein step b) further includes
2 the steps of:
- 3 a) when the determined time interval is not between the predetermined
4 range of time values, performing the steps of;
- 5 i) locating a third phase reversal in the voice signal, the third
6 phase signal being the next consecutive phase reversal in the
7 voice signal after the second phase reversal;
- 8 ii) determining the time interval between the location of the second
9 phase reversal in the signal and the third phase reversal in the
10 voice signal;
- 11 iii) when the determined time interval is between the predetermined
12 range of time values performing the steps of:
- 13 a) encoding the voice signal into a digital data signal
14 comprising the modulated data signal by linearly
15 quantizing the voice signal;
- 16 b) packetizing the coded voice signal into a plurality of
17 digital packets for transmission over the digital voice
18 network; and

25 a) compressing the voice signal; and

26 b) packetizing the compressed voice signal into a plurality
27 of digital packets for transmission over the digital voice
28 network;
29 and wherein the method further includes the step of when the received digital
30 signal does not include a encoded data signal decompressing the received
31 digital signal into a voice signal.

1 28. (Original) The method according to claim 24, wherein step a) includes the
2 steps of:
3 a) selecting a segment of the voice signal;
4 b) converting the segment of the voice signal from a time domain signal to
5 a frequency domain signal;
6 c) comparing the energy of a bin of the frequency domain signal that
7 corresponds to the frequency of the answer tone with adjacent
8 frequency bins; and
9 d) indicating that the answer tone is present in the segment of the voice
10 signal when the energy of the frequency bin corresponding to the
11 frequency of the answer tone is greater than the energy of the adjacent
12 frequency bins.

1 29. (Original) The method according to claim 28, wherein step a) includes the
2 steps of:
3 a) selecting a segment of the voice signal; and
4 b) down sampling the selected segment of the voice signal.

1 30. (Original) The method according to claim 12, wherein step b) iv) a) includes
2 the steps of:
3 a) normalizing the voice signal; and
4 b) converting the normalized voice signal into a digital floating point
5 signal.

- 1 31. (Original) The method according to claim 30, wherein step a) includes the
2 steps of:
- 3 a) finding the sample of the voice signal having the maximum value; and
4 b) normalizing the sample of the voice signal having the maximum value
5 by left shifting the sample until all redundant sign bits are eliminated
6 where NLS is the number of left shifts; and
7 c) right shifting all the samples of the voice signal as a function of NLS.
- 1 32. (Original) The method according to claim 31, wherein step c) includes the step
2 of right shifting all the samples of the voice signal as a function of NLS and
3 the bit precision of the mantissa of the floating point signal.
- 1 33. (Original) The method according to claim 31, wherein step c) includes the step
2 of right shifting all the samples of the voice signal by $16 - \text{NLS} - \text{N_prec}$
3 where N_prec is the bit precision of the mantissa of the floating point signal.
- 1 34. (Original) The method according to claim 33, wherein N_prec is set to 4 for
2 24.8 bits per second (BPS) data signals, 5 for 30.8 BPS data signals, 6 for 36.8
3 BPS data signals, and 7 for 42.8 BPS data signals.
- 1 35. (Original) The method according to claim 30, further including the step of
2 downsampling the voice signal from a first rate to a second lower rate.
- 1 36. (Original) The method according to claim 24, wherein step b) iv) a) includes
2 the steps of:
- 3 a) normalizing the voice signal; and
4 b) converting the normalized voice signal into a digital floating point
5 signal.

- 1 37. (Original) The method according to claim 36, wherein step a) includes the
2 steps of:
- 3 a) finding the sample of the voice signal having the maximum value; and
4 b) normalizing the sample of the voice signal having the maximum value
5 by left shifting the sample until all redundant sign bits are eliminated
6 where NLS is the number of left shifts; and
7 c) right shifting all the samples of the voice signal as a function of NLS.
- 1 38. (Original) The method according to claim 37, wherein step c) includes the step
2 of right shifting all the samples of the voice signal as a function of NLS and
3 the bit precision of the mantissa of the floating point signal.
- 1 39. (Original) The method according to claim 37, wherein step c) includes the step
2 of right shifting all the samples of the voice signal by $16 - \text{NLS} - \text{N_prec}$
3 where N_prec is the bit precision of the mantissa of the floating point signal.
- 1 40. (Original) The method according to claim 39, wherein N_prec is set to 4 for
2 24.8 bits per second (BPS) data signals, 5 for 30.8 BPS data signals, 6 for 36.8
3 BPS data signals, and 7 for 42.8 BPS data signals.
- 1 41. (Original) The method according to claim 36, further including the step of
2 downsampling the voice signal from a first rate to a second lower rate.
- 1 42. (Original) A method of packetizing a digital voice signal for transmission over
2 a digital voice network where the voice signal may include a modulated data
3 signal, the method comprising the steps of:
- 4 a) determining whether the digital voice signal includes a modulated data
5 signal; and
6 b) when the digital voice signal includes a modulated data signal,
7 performing the steps of:

- 8 i) encoding the voice signal into a digital data signal comprising
9 the modulated data signal by linearly quantizing the voice
10 signal; and
11 ii) packetizing the coded voice signal into a plurality of digital
12 packets for transmission over the digital voice network.

1 43. (Original) The method according to claim 42, wherein step b) i) includes the
2 steps of:

- 3 a) normalizing the voice signal; and
4 b) converting the normalized voice signal into a digital floating point
5 signal.

1 44. (Original) The method according to claim 43, wherein step a) includes the
2 steps of:

- 3 a) finding the sample of the voice signal having the maximum value; and
4 b) normalizing the sample of the voice signal having the maximum value
5 by left shifting the sample until all redundant sign bits are eliminated
6 where NLS is the number of left shifts; and
7 c) right shifting all the samples of the voice signal as a function of NLS.

1 45. (Original) The method according to claim 44, wherein step c) includes the step
2 of right shifting all the samples of the voice signal as a function of NLS and
3 the bit precision of the mantissa of the floating point signal.

1 46. (Original) The method according to claim 44, wherein step c) includes the step
2 of right shifting all the samples of the voice signal by $16 - \text{NLS} - \text{N_prec}$
3 where N_prec is the bit precision of the mantissa of the floating point signal.

1 47. (Original) The method according to claim 46, wherein N_prec is set to 4 for
2 24.8 bits per second (BPS) data signals, 5 for 30.8 BPS data signals, 6 for 36.8
3 BPS data signals, and 7 for 42.8 BPS data signals.

1 48. (Original) The method according to claim 43, further including the step of
2 downsampling the voice signal from a first rate to a second lower rate.

1 49. (Original) A method of transmitting a digital voice signal over a digital voice
2 network where the voice signal may include a modulated data signal, the
3 method comprising the steps of:

4 a) determining whether the digital voice signal includes a modulated data
5 signal;

6 b) when the digital voice signal includes a modulated data signal,
7 performing the steps of:

8 i) encoding the voice signal into a digital data signal comprising
9 the modulated data signal by linearly quantizing the voice
10 signal;

11 ii) packetizing the coded voice signal into a plurality of digital
12 packets for transmission over the digital voice network

13 c) transmitting the digital packets across the network;

14 d) converting the digital packets into a received digital signal;

15 e) determining whether the received signal includes a coded voice signal;
16 and

17 f) when the received digital signal includes a encoded data signal
18 decoding the received digital signal into a modulated voice signal by
19 dequantizing the received digital signal.

1 50. (Original) The method according to claim 49, wherein step b) i) includes the
2 steps of:

3 a) normalizing the voice signal; and

4 b) converting the normalized voice signal into a digital floating point
5 signal.

- 1 51. (Original) The method according to claim 50, wherein step a) includes the
2 steps of:
- 3 a) finding the sample of the voice signal having the maximum value; and
4 b) normalizing the sample of the voice signal having the maximum value
5 by left shifting the sample until all redundant sign bits are eliminated
6 where NLS is the number of left shifts; and
7 c) right shifting all the samples of the voice signal as a function of NLS.
- 1 52. (Original) The method according to claim 51, wherein step c) includes the step
2 of right shifting all the samples of the voice signal as a function of NLS and
3 the bit precision of the mantissa of the floating point signal.
- 1 53. (Original) The method according to claim 51, wherein step c) includes the step
2 of right shifting all the samples of the voice signal by $16 - \text{NLS} - \text{N_prec}$
3 where N_prec is the bit precision of the mantissa of the floating point signal.
- 1 54. (Original) The method according to claim 53, wherein N_prec is set to 4 for
2 24.8 bits per second (BPS) data signals, 5 for 30.8 BPS data signals, 6 for 36.8
3 BPS data signals, and 7 for 42.8 BPS data signals.
- 1 55. (Original) The method according to claim 50, further including the step of
2 downsampling the voice signal from a first rate to a second lower rate.

REMARKS

Reconsideration and further examination is respectfully requested. The Applicants have cancelled claim 1 and amended claims 2-5. The Examiner has rejected claim 1 under 35 USC § 102(e) as being anticipated by US Patent No. 6,263,016 to Bellenger et al ("Bellenger"). The Examiner has rejected claims 6, 12, 18, 24, 42, and 49 under 35 USC § 103(a) as being